

JP

10-012457

January 26, 1998

INT-CL: [07] G06 F 17/30US-CL-ISSUED: 707/205, 707/201, 707/202, 707/204, 711/112, 711/113, 711/114, 714/710
US-CL-CURRENT: 707/205, 707/201, 707/202, 707/204, 711/112, 711/113, 711/114, 714/710

FIELD-OF-SEARCH: 714/6, 714/20, 714/7, 714/210, 714/710, 711/112, 711/113, 711/114, 711/111, 711/129, 711/137, 711/155, 711/160, 711/161, 711/202, 707/204, 707/202, 707/201, 707/205

PRIOR-ART-DISCLOSED:

U. S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<u>5455926</u>	October 1995	Keele et al.	395/404
<u>5515500</u>	May 1996	Mizuno et al.	714/7
<u>5734859</u>	March 1998	Yorimitsu et al.	395/440
<u>6237046</u>	May 2001	Ohmura et al.	710/1

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
7-200191	August 1995	JP	

ART-UNIT: 2172

PRIMARY-EXAMINER: Corrielus; Jean M.

ATTY-AGENT-FIRM: Mattingly, Stanger & Malur, P.C.

ABSTRACT:

A storage sub-system employs a staging control information table by which staging of data to be read and redundant data thereof can be executed together to reduce response time in the event of a data read failure. The staging control information table also permits pre-read staging to be executed in the forward, backward or both the forward and backward directions, to reduce response time.

23 Claims, 7 Drawing figures

Full	Title	Citation	Front	Review	Classification	Date	Reference			Claims	KMC	Draft Desc	Image
------	-------	----------	-------	--------	----------------	------	-----------	--	--	--------	-----	------------	-------

Clear	Generate Collection	Print	Fwd Refs	Bkwd Refs	Generate OACS
-------	---------------------	-------	----------	-----------	---------------

Term	Documents
STAGING	8950
STAGINGS	51
(5 AND STAGING).USPT.	2
(L5 AND STAGING).USPT.	2

Hit List

PRCC

Search Results - Record(s) 1 through 2 of 2 returned.

 1. Document ID: US 6611851 B2

L6: Entry 1 of 2

File: USPT

Aug 26, 2003

US-PAT-NO: 6611851

DOCUMENT-IDENTIFIER: US 6611851 B2

TITLE: Storage sub-system having expanded data read

DATE-ISSUED: August 26, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Ishikawa; Atsushi	Minamiashigara			JP
Matsumoto; Yoshiko	Minamiashigara			JP
Takamoto; Kenichi	Odawara			JP

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Hitachi, Ltd.	Tokyo			JP	03

APPL-NO: 10/ 090843 [PALM]

DATE FILED: March 6, 2002

PARENT-CASE:

This is a continuation application of U.S. Ser. No. 09/236,443, filed Jan. 25, 1999, now U.S. Pat. No. 6,374,269 now allowed.

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	APPL-DATE
JP	10-012457	January 26, 1998

INT-CL: [07] G06 F 17/30

US-CL-ISSUED: 707/205; 707/201, 707/202

US-CL-CURRENT: 707/205; 707/201, 707/202

FIELD-OF-SEARCH: 707/205, 707/201, 707/202, 707/204, 711/112, 711/113, 714/710, 714/7, 714/10

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<u>5455926</u>	October 1995	Keefe et al.	
<u>5515500</u>	May 1996	Mizuno et al.	

5734859
6237046March 1998
May 2001Yorimitsu et al.
Ohmura et al.

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
7-200191	August 1995	JP	

ART-UNIT: 2172

PRIMARY-EXAMINER: Corrielus; Jean M.

ATTY-AGENT-FIRM: Mattingly, Stanger & Malur, P.C.

ABSTRACT:

A storage sub-system employs a staging control information table by which staging of data to be read and redundant data thereof can be executed together to reduce response time in the event of a data read failure. The staging control information table also permits pre-read staging to be executed in the forward, backward or both the forward and backward directions, to reduce response time.

1 Claims, 7 Drawing figures

Full	Title	Citation	Front	Review	Classification	Date	Reference	Abstract	Claims	KMPC	Draw Desc	Image
------	-------	----------	-------	--------	----------------	------	-----------	----------	--------	------	-----------	-------

 2. Document ID: US 6374269 B1

L6: Entry 2 of 2

File: USPT

Apr 16, 2002

US-PAT-NO: 6374269

DOCUMENT-IDENTIFIER: US 6374269 B1

TITLE: Storage sub-system having expanded data read

DATE-ISSUED: April 16, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Ishikawa; Atsushi	Minamiashigara			JP
Matsumoto; Yoshiko	Minamiashigara			JP
Takamoto; Kenichi	Odawara			JP

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Hitachi, Ltd.	Tokyo			JP	03

APPL-NO: 09/ 236443 [PALM]

DATE FILED: January 25, 1999

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	APPL-DATE
---------	---------	-----------